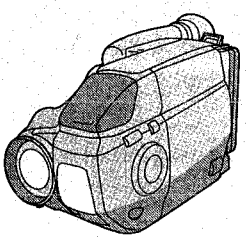
JVC

VHS VIDEO MOVIE

GR-AX40EG/AX60EG/AX70EG



Compact VHS

videomovie

VHS C PAL

SPECIFICATIONS

GENERAL

Format	: VHS PAL standard
Power source	: DC 6V ⎓
Power consumption	: 6.5 W (GR-AX60 light off, GR-AX70/GR-AX40) 9.5 W (GR-AX60 light on)
Signal system	: PAL-type
Video recording system	: Luminance: FM recording Colour: Converted sub-carrier direct recording Conforms to VHS standard
Cassette	: VHS C cassette
Tape speed	: 23.39 mm/sec
Recording time Max.	: 45 minutes (with EC-45 cassette)
Operating temperature	: 0°C to +40°C
Operating humidity	: 35% to 80%
Storate temperature	: –20°C to +50°C
Weight	: Approx. 720 g (GR-AX70/AX40) Approx. 730 g (GR-AX60)
Dimensions	: 115(W) x 118(H) x 182(D) mm (incl. viewfinder)

VIDEO

Output	: 1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output	: –6 dBs, 1 k-ohm (via AUDIO out connector)

CAMERA

Pick up	: 1/3"-format CCD
Minimum required illumination	: 2 lux (F1.8)
Illumination range	: 2 to 100,000 lux
Lens	: F1.8, f = 5.5 to 66 mm, 12:1 power zoom lens with auto iris and macro control, filter diameter 43 mm
Viewfinder	: Electronic viewfinder with • 0.7" colour LCD (GR-AX70) • 0.6" black/white CRT (GR-AX60/AX40)

White balance adjustment: Auto/Manual

MULTI AC CHARGER/ADAPTER (AA-V35EG) SPECIFICATIONS

Power requirement	: AC 110 to 240 V ∼, 50/60Hz
Power consumption	: 23 W
Output	: DC 8.5 V ⎓, 1.6 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system	: Constant current, peak detection, timer controlled
Dimensions	: 98(W) x 46(H) x 138(D) mm
Weight	: Approx. 390 g

CASSETTE ADAPTER (C-P6U) SPECIFICATIONS

Dimensions	: 188(W) x 25(H) x 104(D) mm
Weight	: Approx. 240 g
Accessory	: "R6" -size battery x 1

PROVIDED ACCESSORIES

Multi AC Charger/Adapter AA-V35EG
Battery pack BN-V12U
A/V output cable
Editing cable
Cable adapter
Lithium battery CR2025
Remote control unit (GR-AX70/AX60 only) RM-V704U
Cassette adapter C-P6U
Shoulder strap VU-V220U

E. &O. E. Design and specifications subject to change without notice.

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No. 86229
March 1994

Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

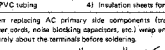


Fig. 1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10~18 kg of force in any direction will not loosen it.

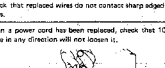


Fig. 2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connectors between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.
    1) **Connector part number : E03830-001**
    2) **Required tool : Connector crimping tool of the proper type** which will not damage insulated parts.
    3) **Replacement procedure**
    (1) Remove the old connector by cutting the wires at a point close to the connector.
    Important : Do not reuse a connector (discard it).

Fig. 3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

Fig. 4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

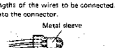


Fig. 5

(4) As shown in Fig. 6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

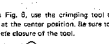


Fig. 6

(5) Check the four points noted in Fig. 7.

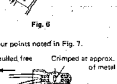

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig. 7

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method: (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

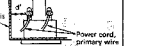


Fig. 9

5. **Grounding (Class I model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

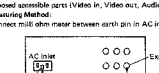


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.8 ohm

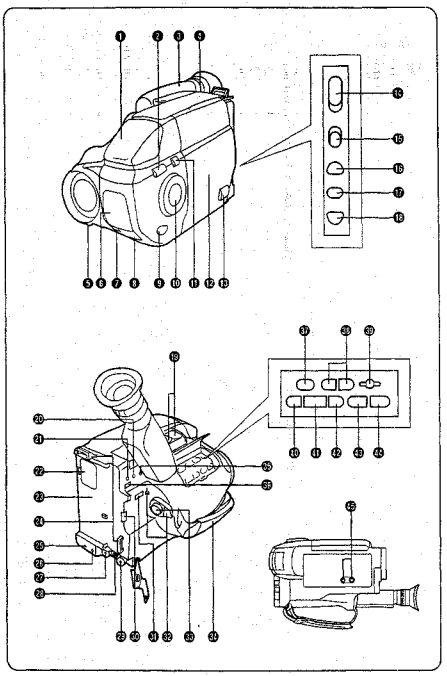
AC Line Voltage	Region	Insulation Resistance (IR)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 minute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	—	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ /500 V DC	AC 3 kV 1 minute (Class II)	d, d' ≧ 4 mm
			AC 1.5 kV 1 minute (Class I)	d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan	1 kΩ	i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada	0.15 μF, 1.5 kΩ	i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia	2 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
		50 kΩ	i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Notes: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.



SAFETY PRECAUTIONS

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

The AA-V35EG Multi AC Charger/Adapter should be used with 110 — 240 V~, 50/60 Hz only.

Caution:
To prevent electric shocks and fire hazards, do NOT use any other power source.

IMPORTANT (In the United Kingdom)
Mains Supply (240 V~, 50 Hz only)

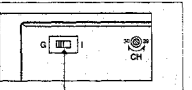
IMPORTANT

Do not make any connection to the Larger Terminal coded E or Green. The wires in the mains lead are coloured in accordance with following code:

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a competent electrician.

Note
We recommend that you should disconnect the AC cord from the outlet.

Warning on lithium battery
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.
Replace battery with CR2025; use of another battery may present a risk of fire or explosion.
- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.



ATTENTION:
The system select switch on the optional RF-V5E RF unit has been set to G (Continental PAL, 5.5 MHz).

CAUTION:
To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.

NOTES:
- The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.
- The rating plate (serial number plate) of the Multi AC Charger/Adapter is on its bottom.

This unit is produced to comply with Directives 76/889/EEC, 82/499/EEC, 87/308/EEC and Standard IEC Publ. 65.

You are recommended to carefully read the cautions on page 38 and 39 before use.

VHS C PAL HQ

- VideoMovie is designed exclusively for the VHS-C video cassette. Only cassettes marked VHS-C can be used with this unit.
- HQ VHS is compatible with existing VHS equipment.

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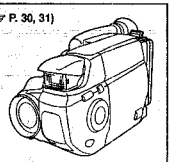
MAJOR FEATURES

ENGLISH

- **Automatic 8-Segment Random Assemble Editing (☞ P. 30, 31)**
- **Full function MBR (Multi-Brand Remote) (GR-AX70/AX80 only, ☞ P. 22 – 23, 29 – 33)**
- **Programme AE with special effects (☞ P. 18)**
- **2-Speed 12x zoom with 3-position zoom control (☞ P. 11, 17)**
- **Retractable auto light (GR-AX60 only, ☞ P. 21)**
- **Title Generators (☞ P. 14 – 15)**
- **Auto Pause (☞ P. 13)**
- **Cinema mode (☞ P. 19)**



Just make sure... it's Compact VHS VHSC

JVC COMPACT VHS ADVANTAGES

☞ **Convenience**
Easy playback on your VHS deck* — no hook-ups necessary.

☞ **Conserve**
Don't have to use the camcorder for playback — only half the camcorder wear.

☞ **Comfort**
Can use the deck's remote control and high speed REW and FF from your easy chair.

☞ **Communication**
Can send your tapes to others who also own a VHS VCR.

☞ **Choice**
Can also playback recordings through the viewfinder or connect directly to a TV.

*Via cassette adapter

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This VideoMovie is designed to be used with PAL-type colour television signals. It cannot be used for playback with a television of a different standard. However, live recording and viewfinder playback are possible anywhere.
Use the BN-V12U/BN-V14U/BN-V22U/BN-V50U/BN-V80U battery packs and, to recharge them, the provided multi-voltage Multi AC Charger/Adapter. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

CONTROLS AND CONNECTORS

Refer to the diagrams on the front foldout page.

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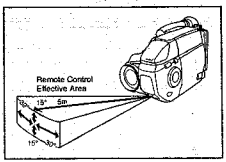
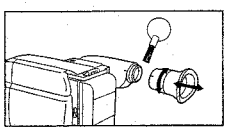


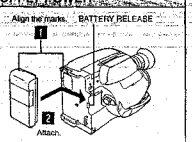
Receives the transmitted beam signal.
*The transmitted beam may not be effective or may cause misoperations when the infrared beam sensor window is directly exposed to sunlight or powerful lighting.



Cleaning the eyepiece
The viewfinder eyepiece can be removed for cleaning. Turn the eyepiece counterclockwise and pull it out.

QUICK OPERATION GUIDE

SUPPLY POWER

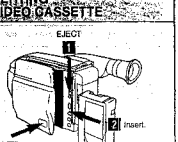


Using the battery pack

1. Align mark on battery pack with similar mark on back of VideoMovie. (Charging procedure, ☞ P. 6)
2. Slide the battery pack in the direction of the arrow until it locks into place.

To remove the battery pack
Press BATTERY RELEASE and slide out the battery pack.

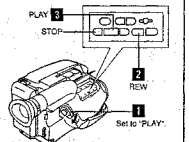
INSERTING A VIDEO CASSETTE



1. Slide EJECT.
2. Insert a video cassette.
3. Press PUSH.

(For more details, ☞ P. 11.)

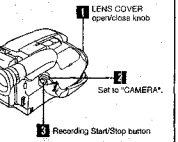
PLAYBACK



1. Set the power switch to "PLAY".
2. Press REW.
   — The tape will automatically stop at the beginning of the tape.
3. Press PLAY.
   — Playback starts and playback picture appears in the viewfinder.

■ To stop playback, press STOP.
(For more details, ☞ P. 24.)

SHOOTING



1. Slide the LENS COVER open/close knob to open the lens cover.
2. Set the power switch to "CAMERA".
   — The power indicator will light and image will be seen in the viewfinder.
3. Press the Recording Start/Stop button.
   — Recording starts.

■ To stop recording temporarily, momentarily press the Recording Start/Stop button once again.

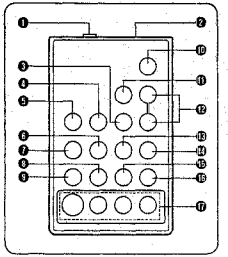
(For more details, ☞ P.12)

ENGLISH

PREPARATIONS

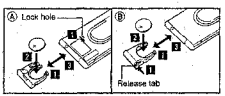
RM-V704U REMOTE CONTROL UNIT

The RM-V704U Full-Function MBR (Multi-brand Remote) can operate this VideoMovie from a distance as well as the basic operations (PLAY, STOP, PAUSE, FF, and REW) of your VCR. This remote control unit is useful when dubbing from the VideoMovie to your VCR, and it makes additional recording functions possible.
The RM-V704U is provided with GR-AX70/AX80, and is available optionally for GR-AX40.



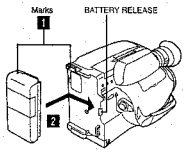
Inserting the battery

1. Pull out the battery holder according to the type of remote control unit you have.
   Type Ⓐ : Pull out the battery holder while sliding the lock hole.
   Type Ⓑ : Pinch the release tab and pull out the battery holder.
2. Insert the lithium battery (CR2025), with its plus (+) side up, into the battery holder.
3. Replace the battery holder until it clicks in place.
   *Read warning on lithium battery. (☞ P. 2)



Buttons	Functions	
	With the VideoMovie's power switch set to "CAMERA".	With the VideoMovie's power switch set to "PLAY".
❶ PAUSE IN connector	—	☞ P. 31
❷ Infrared beam transmitting window	Transmits the beam signal.	
❸ MBR SET button	—	☞ P. 29
❹ INT. TIME button	Self-Timer/Time lapse (☞ P. 22, 23)	—
❺ REC TIME button	Animation/Time lapse (☞ P. 23)	—
❻ FF button	Retake (Forward)	FF/FF Shuttle Search
❼ REW button	Retake (Rewind)	Rew/Rew Shuttle Search
❽ PAUSE button	—	Pause
❾ PLAY button	—	Playback start
❿ START/STOP button	Functions same as the Recording Start/Stop button of the VideoMovie.	
⓫ VISS button	Index code marking (☞ P. 22)	—
⓬ ZOOM(T/W) buttons	Slow-speed zoom (☞ P. 17)	—
⓭ VCR CTL button	—	☞ P. 29
⓮ A. DUB button	—	Audio dubbing (☞ P. 33)
⓯ STOP button	—	Stop
⓰ INSERT button	—	Insert Editing (☞ P. 32)
⓱ R. A. EDIT buttons	—	☞ P. 30

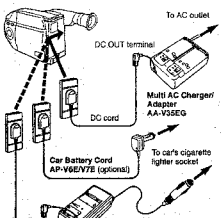
ENGLISH



Recording time

	Video light OFF	Video light ON
BN-V12U	approx. 55 min.	approx. 30 min
BN-V14U	approx. 65 min.	approx. 40 min
BN-V22U	approx. 110 min.	approx. 70 min
BN-V50U	approx. 140 min.	approx. 85 min
BN-V60U	approx. 110 min.	approx. 70 min

- The recording time per charge is influenced by the duration of the recording standby, frequency of zooming, etc. It is safer to have spare battery packs.
- The video light is built-in only on the GR-AX60.


To AC outlet
DC OUT terminal
Multi AC Charger/ Adapter AA-V35EG
DC cord
Car Battery Cord AP-V6E/V7E (optional)
To car's cigarette lighter socket
Car Battery Charger/Adapter BH-V3E (optional)

POWER SUPPLY SYSTEM

The convenient 3-way power supply system gives you a choice of the most appropriate power supply unit, depending on the application.

- No function is available without power supply.
- Do not use any power supply other than specified.
- Never attempt to use these power supply units with any equipment other than the VideoMovie.
- The provided Multi AC Charger/Adapter features automatic voltage selection in the AC range from 110 V to 240 V.

WITH BATTERY PACK

The battery pack has been kept in the uncharged state for shipment. Therefore, before use, be sure to charge it. (☞ See next page.)

Attaching the battery pack

- Before attaching the battery pack, insert the lithium battery.(☞ P. 10)

1 Align mark on battery pack with similar mark on back of VideoMovie.

2 Slide the battery pack into place in the direction of the arrow until it locks in place.

To remove the battery pack:

Slide out the battery pack while pressing BATTERY RELEASE.

WITH AC POWER

Use the Multi AC Charger/Adaptor.

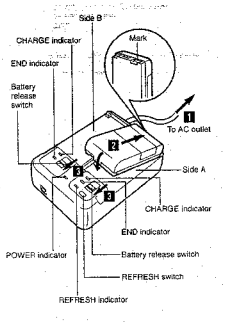
Note:

This unit can be used with 110 V to 240 V power supplies. Selection is automatic and no adjustment is required.

IN A CAR

Use the optional BH-V3E Car Battery Charger or AP-V6E/AP-V7E Car Battery Cord. Before use, refer to the instruction booklet.

(Continued on next page.)



	Charging time	Discharging time
BN-V12U	approx. 50 min.	approx. 210 min
BN-V14U	approx. 55 min.	approx. 270 min
BN-V22U	approx. 100 min.	approx. 420 min
BN-V50U	approx. 120 min.	approx. 540 min
BN-V60U	approx. 100 min.	approx. 420 min

- The diagrams above indicate the approximate charging and discharging times of battery packs that are fully charged.
- Charging time and discharging time will vary depending on the ambient temperature and the status of the battery pack.

Notes:

- The REFRESH function is only available on side A.
- Only the A side can be used to charge/discharge nickel-metal hydride battery packs (i.e., BN-V50U) and the BN-V14U battery pack.
- The AA-V35EG cannot discharge and charge battery packs simultaneously.

POWER SUPPLY SYSTEM (cont'd)

CHARGING/DISCHARGING THE BATTERY PACK

Charging the battery pack

1 Connect the AC power cord to a wall outlet.
— The POWER indicator lights.

2 Align marks and push in the battery pack until it locks in place.
— The CHARGE indicator blinks.
— When charging has been completed, the CHARGE indicator will go off and the END indicator will light.

3 Slide the battery release switch in the direction of the arrow to remove the battery pack.

Charging two battery packs consecutively

1 Attach two battery packs; one to side A and one to side B.

2 Charging starts from the side (A or B) on which a battery pack was attached first.
— The CHARGE indicator blinks on the side where charging is in process. The other CHARGE indicator lights steadily while on stand-by.

3 Charging on one side is completed.
— On that side, the CHARGE indicator will go off and the END indicator will light.
Then charging begins on the other side.
— The CHARGE indicator that has remained lit starts blinking.

4 When charging is over on both sides A and B, the two END indicators will light.

Using the REFRESH feature

The REFRESH feature on the Multi AC Charger/Adapter AA-V35EG allows you to completely discharge the power from the battery pack before charging. After charging the battery pack several times, the actual battery operating time will gradually decrease. For this reason it is recommended to use the REFRESH feature only after every 5 charges.

1 Align marks and push in the battery pack until it locks in place.

2 Push REFRESH.
— The REFRESH indicator will light, and discharging will begin.
— When discharging is completed, the REFRESH indicator will go off. Then charging will begin and the CHARGE indicator will start to blink.
— If two battery packs are attached, the one on side A will always be discharged first; then the battery on side B is charged before the one on side A.

Notes:

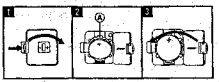
- Do not repeatedly recharge a battery pack without fully discharging it. Its service life will decrease. Use the REFRESH feature after every 5 charges.
- Even if a battery pack is fully charged, but is not used, it naturally discharges gradually. Be sure to recharge the battery pack just before using it, or the day before you intend to use it.
- This unit becomes warm due to the flow of electric current inside. Operate it in places having good ventilation. Do not allow it to discharge in a container, such as a bag, etc. Blocking the ventilation causes the temperature inside the unit to rise, possibly resulting in a damaged unit.
- If either recharging or discharging is stopped in the middle of the process, remove the battery pack before unplugging the AC cord.
- This unit incorporates an over-discharging protection circuit; however, immediately remove the battery pack from this unit after discharging has been completed to maintain the battery pack's capacity.
- If used near a radio, the Multi AC Charger/Adapter may interfere with reception.
- Be sure to connect the AC power cord and unplug the DC cord before charging or discharging the battery pack.
- Before storing the battery pack for a long period it is recommended to discharge it.
- The REFRESH feature will not function if the power status of a battery pack is discharged (No power remaining).
- With a just-purchased battery pack, or with a battery pack that has been stored for a long period, the CHARGE indicator may not light properly. In such a case, remove and reattach the battery pack again, then do the recharging procedure. The CHARGE indicator should light during recharging to indicate, the battery pack is normal. If this is not the result, consult your nearest JVC dealer.

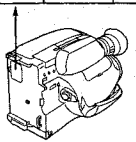
A WORD ON THE EXCLUSIVE BATTERY PACKS

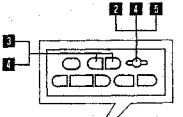
The battery packs are nickel-cadmium batteries and nickel-metal hydride batteries. Be sure to carefully read the caution attached to the battery pack.

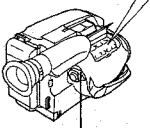
Temperature ranges:
The recharging time is based on room temperature of 20°C. The lower the temperature, the longer the recharging time.
For charging:10°C to 35°C
For operating:0°C to 40°C
For storing:–10°C to 30°C

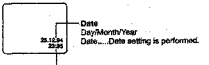
PREPARATIONS (Cont'd)











CLOCK (LITHIUM) BATTERY INSERTION

Necessary for clock and date/time settings.

* Switch off the unit's power and remove the power supply unit before inserting or removing the clock battery.

1 Open the clock battery compartment cover while pressing the release tab.
2 Insert the provided lithium battery with the plus (+) side up and push it in.
  * When removing the battery, insert a pointed non-metallic object between the battery and the compartment (Ⓐ) to pull it out.
3 Close the compartment cover until it clicks in place.

Warning on lithium battery

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of it in fire.

(See Warning on lithium battery, ☞ P. 2)

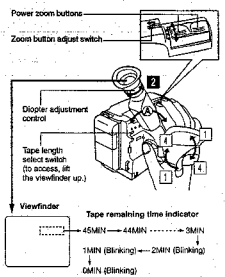
SETTING DATE/TIME

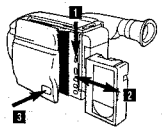
Before adjusting the date and time for the first time or after replacing the clock battery.

1 Set the power switch to "CAMERA".
2 Press SET. — The day blinks.
3 Press SELECT to choose the correct day.
4 Repeat steps 2 and 3 to set the month, year, hour and minute.
5 Press SET to start the clock.
  — Now that the setting is completed, blinking stops. Both the date and time will be displayed for confirmation, after which the date remains displayed by itself.

Notes:

- While the date or time are blinking, the clock does not keep time.
- When re-adjusting the data, press SET and SELECT to correct them. After adjustment is completed, both the date and time appear for confirmation, then the display returns to the mode before correcting.
- When PROGRAM AE is set to "AUTO MODE LOCK" (☞ P. 18), the date and time are displayed immediately after adjustments, after which the display automatically changes to Auto Date record mode.(☞ P. 14)





Notes:

- Ensure that tape is not slack inside the cassette, then load the cassette correctly.
- Do not repeat loading and unloading of the cassette without running the tape, as this will slacken the tape, causing tape damage.
- The cassette holder can be opened even when the power is off.

ADJUSTING THE GRIP

1 Separate the Velcro strip to expand the loop.
2 Pass your right hand through the loop and grasp the grip.
3 Adjust the length of the strap so that your thumb and fingers can easily manipulate the Recording Start/Stop button and power zoom buttons.
4 Refasten the Velcro strip.

- The power zoom buttons can be adjusted to one of three positions: up, middle and down.
  — Slide the zoom button adjust switch in the direction of the arrow, and move the power zoom button to the desired position.

VIEWFINDER ADJUSTMENT

- **Positioning**
  The viewfinder can be positioned for best viewability (Ⓐ).
- **Diopter adjustment**
  The viewfinder lens can be adjusted to suit the operator's eyesight.

1 Set the power switch to "CAMERA".
2 Turn the diopter adjustment control until the indications in the viewfinder are clearly focused.

SET THE TAPE LENGTH

The tape remaining time is displayed in the viewfinder as shown. Before shooting, set the tape length select switch according to the tape being used.

- **EC-30:** When using a tape with 30-minute recording time or less.
- **EC-45:** When using a tape with recording time more than 30 minutes.

Notes:

- The indicated remaining time is approximate.
- The time required to calculate the remaining tape length and accuracy of the calculation may vary according to the type of tape used.
- TAPE END" appears when the tape reaches its end. "TAPE END" also appears when a cassette is loaded whose tape is already at its end.

LOADING AND UNLOADING A VIDEO CASSETTE

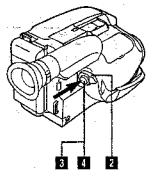
Positioning

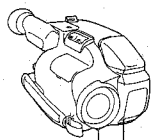
1 Slide EJECT. — The cassette holder opens.
2 Insert the cassette with its label facing outward.
3 Press PUSH to close and lock the cassette holder.

Unloading

1 Slide EJECT. — The cassette holder opens.
2 Remove the cassette.
3 Press PUSH to close and lock the cassette holder.

RECORDING OPERATION





Notes:

- For a longer pause, set the power switch to "OFF" to save power.
- When a tape reaches its end during recording, "TAPE END" indicator will appear in the viewfinder and power itself off automatically if left for longer than 5 minutes.
- If the Record-Standby mode continues for longer than about 5 minutes, the unit switches itself off automatically. To restart recording, turn the power on and press the Recording Start/Stop button. This makes clean assembled recordings possible even after a long pause.
- When turning off the VideoMovie with the power switch set to "CAMERA", be sure to set the switch to "OFF" first. Then set it back to "CAMERA" to turn on the VideoMovie again.

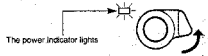
SHOOTING

Preparations

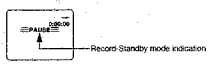
- Supply power.(☞ P. 7.)
- Insert a video cassette correctly. (☞ P. 11.)
- Adjust the grip strap. (☞ P. 11.)

1. To enter the Record-Standby mode

1 Slide the LENS COVER open/close switch to open the lens cover.
2 Set the power switch to "CAMERA".

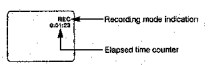


— The VideoMovie enters the Record-Standby mode.
The aimed-at scene will appear on the viewfinder screen.



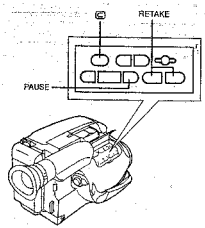
2. To shoot the scene

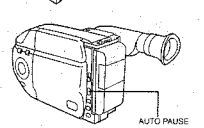
3 Press the Recording Start/Stop button to start recording.
— The tally lamp lights while the recording is in progress.

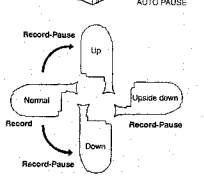


4 To stop recording temporarily.
Press the Recording Start/Stop button once again.

- To restart recording.
  Press the Recording Start/Stop button.
- Repeating steps 3 and 4 produces assemble recordings.







QUICK REVIEW

If you want to review the end of the last recording for confirmation, use this function.

- Press ⏪ from the Record-Standby mode.
  - The tape will be rewound for about 2 seconds of programme time and played back automatically for this section, after which it will pause in the Record-Standby mode for the next shot.

Note:
Distortion might occur when playback starts. This is normal.

RETAKE

While recording, you may decide to re-record certain segments. The Retake function is convenient for this.

1. Make sure the VideoMovie is in the Record-Standby mode. (If not, engage the mode.)
2. Press either RETAKE to reach the point where you wish a new recording to start.
   - When RETAKE is released, the camera will enter the Record-Standby mode again.
3. Press the Recording Start/Stop button.
   - Recording starts.

Note:
Noise may appear during Retake. This is normal.

AUTO PAUSE SYSTEM

With the Auto Pause system, the VideoMovie automatically stops recording when it is pointed down. This function prevents shooting the ground, your feet, etc. by mistake.

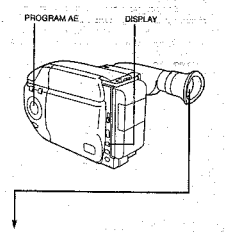
- Press AUTO PAUSE to "ON".
  - When the VideoMovie is tilted down by a large degree (approx. 90°) from its horizontal position during recording, it will automatically enter the Record-Pause mode, and the "AUTO PAUSE" indication will appear in the viewfinder.
- The Auto Pause system is also effective when the VideoMovie is pointed up or upside down.
- This system is also effective about a large degree (approx. 90°) twist to the left or right side from the horizontal position.
- To shoot in any of the above mentioned positions,set AUTO PAUSE to "OFF".

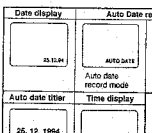
Helpful hints for assemble recording

- When the low-battery warning (⊏▭) appears in the viewfinder.
  Turn off the VideoMovie first. Replace the battery pack with a charged one, and then set the power switch to "CAMERA" again. Now the unit is ready to resume recording.
- When recording onto a partially recorded tape:
  Play back the tape, and at the point where you wish a new recording to start, press PAUSE to get a still picture. Then set the power switch to "CAMERA" to start recording.

ENGLISH

RECORDING OPERATION (Cont'd)





DATE/TIME CHARACTER INSERT

Select the display mode
The date/time/character can be displayed and recorded according to the selected mode.

1. Set the PROGRAM AE select dial to "AUTO MODE RELEASE".
2. Press DISPLAY while in the Record-Pause mode to cycle through the modes in the order shown on the left.

- Setting PROGRAM AE to "AUTO MODE LOCK" always engages the Auto Date record mode. (☞ P. 18)

Recording the display
The selected display mode can be recorded.

- When no display is needed on the recorded tape, select Date-off mode before shooting.
- To delete the display during recording, press DISPLAY.
  - If the display is to be called back on the screen, put the VideoMovie into the Record-Pause mode first. Then press DISPLAY to select the desired mode.

Note:

- The DISPLAY button does not work when PROGRAM AE is set to "AUTO MODE LOCK".

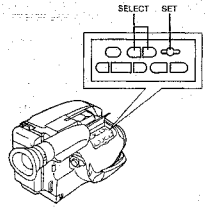
Auto Date Record function/Auto Date Titler
These functions allow the date (day, month and year) to be automatically recorded for about 5 seconds following the first operation of the Recording Start/Stop button:

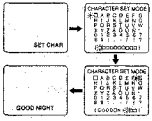
- after changing the date.
- after a cassette is loaded, or
- after its mode is selected by DISPLAY.

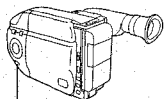
- In the Auto Date Record mode, the viewfinder indication shows the date during the initial 5 seconds, then changes to "AUTO DATE".
- In the Auto Date Titler mode, the date is displayed in large characters in the centre of the viewfinder screen.

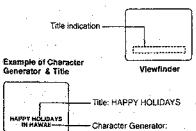
On-Screen Display Mode
The viewfinder indications can also be displayed on the screen of a monitor connected to the VideoMovie.

- Connect the VideoMovie to a video monitor. Press DISPLAY until the viewfinder indications (☞ P. 36,) appear on the monitor screen.
- In the On-Screen Display mode, the date will be displayed and recorded.
- The on-screen display is not available during recording.









Character Generator

You can make your own title, store it in advance and superimpose it over the scene being shot.

How to store:

1. Press DISPLAY until "SET CHAR" or a title you have stored earlier appears in the viewfinder.
2. Press SET.
   — CHARACTER SET MODE screen will appear in the viewfinder.
3. Press SELECT to move the cursor, and then press SET to choose the desired characters.
4. Repeat step 3 to set all needed characters.
   — After all the desired characters have been entered, press SET. The CHARACTER SET MODE screen will disappear, and the stored characters will be displayed.

Notes:

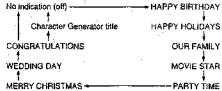
- Up to ten characters can be stored.
- Only one personally input title can be stored at a time. To replace it with another title, proceed as above again.

INSTANT TITLES

The VideoMovie has eight pre-set Titles in memory. One of them can be superimposed above the Character Generator's stored title.

How to superimpose the Title:

Press TITLES as many times as required until the desired Title is displayed. The Title changes in the sequence below:



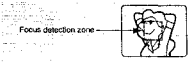
- A personal title stored in the Character Generator can be displayed in the same position as the Instant Title.
  — The Instant Title's function can be used along with the Character Generator mode; consequently, a pair of identical stored titles can be superimposed.

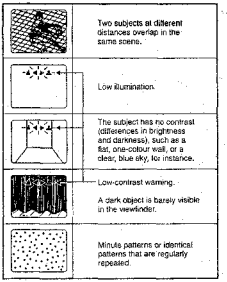
Notes:

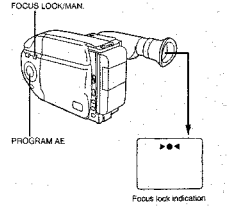
- The TITLES button is not effective during recording.
- The Instant Title cannot be displayed when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18)
- When DISPLAY is pressed during recording, the Title disappears.

ENGLISH

ADVANCED VIDEOGRAPHY TECHNIQUES




Two subjects at different distances overlap in the same scene.
Low illumination.
The subject has no contrast (differences in brightness and darkness), such as a flat, one-colour wall, or a clear, blue sky, for instance.
Low-contrast warning.
A dark object is barely visible in the viewfinder.
Minute patterns or identical patterns that are regularly repeated



FOCUSING

Auto-focus

The VideoMovie's Full Range AF system can offer continuous shooting ability from close-up to infinity. The rectangular focus area detects focus. (No actual indication provided in the viewfinder.)

Notes:

- If the lens is smeared with stains or blurred with condensation, accurate focusing is not possible. Keep them clean. If they become dirty, wipe with a piece of soft cloth. When condensation occurs, dry them by wiping with a soft cloth or wait for conditions in which they become dry.
- Correct focus may not be obtained in these situations on the left. In such case manual focusing should be performed to obtain proper focus.

Focus lock

This VideoMovie's focus lock function is especially useful in the following situations:

- When things pass between your subject and the VideoMovie, make sure to engage the focus lock function, to lock your subject in focus before recording.
- If you want your main subject to appear in a corner of the screen, you should first centre it at the desired distance, then use the auto focus mode for focusing, engage the focus lock function, and move the VideoMovie till the subject is where you want it.

To lock the focus:

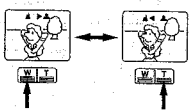
Press FOCUS LOCK/MAN.
— The focus lock indication (▶◀◀) appears in the viewfinder.

To release the focus lock mode (To engage the Auto Focus mode):

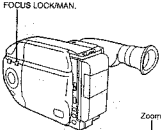
Press FOCUS LOCK/MAN. At the moment when the button is released, the focus lock mode is canceled.

Note:

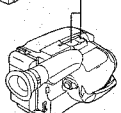
The Focus Lock function is not available when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18)

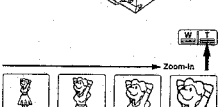


FOCUS LOCK/MAN.



Zoom T/W





Notes:

- Focusing may become unstable during the zooming-in operation. In this case, first zoom in in the Recording Standby mode then, after using the manual focusing or the Focus Lock function to hold the focus fixed, zoom in or out in the Record mode.
- When shooting low-contrast subjects in the Zoom-in mode, the Videomovie automatically zooms out with the low contrast indicator blinking and focus being performed.
- Zooming operation is not available while FOCUS LOCK/MAN. is pressed.

Manual focus

For manual focus operation, proceed as follows:

1 Press the power zoom buttons ("T" and "W") along with FOCUS LOCK/MAN.
   - **To adjust the focus to a farther subject:** Press T. The Manual Focus indications (▲◀ ▲) appear, and ◀ blinks.
   - **To adjust the focus to a closer subject:** Press W. The Manual Focus indications (▲ ▶▲) appear, and ▶ blinks.
   - When the focus level cannot be adjusted any farther or closer, the indicator (▲) or the indicator (▲) will blink.

2 When finished with focus adjustment, release the power zoom buttons.
   — The Manual Focus indications change to the FOCUS LOCK indication (▶◀◀), and the adjusted focus is locked in.

- **To release the Manual Focus mode** (to engage the Auto Focus mode): Press FOCUS LOCK/MAN. At the moment when the button is released, the Manual Focus Mode is cancelled.
  — FOCUS LOCK indication (▶◀◀) disappears.

Notes:

- When you use the Manual Focus mode, be sure to focus the lens in the maximum telephoto position. If you focus in on a certain subject in the wide-angle position, sharply-focused images cannot be obtained when zoomed up because the depth- of-field is reduced at longer focal lengths.
- When focusing manually, make neccessary viewfinder adjustments (☞ P. 11), then focus in.
- Manual Focus operation is not available when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18)

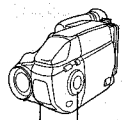
ZOOMING

Pressing the power zoom buttons ("T" and "W") will vary the focal length of the lens.

Procedure

- Pressing T : Zoom in on the image (bring it nearer).
- Pressing W : Zoom out.
- Two zooming speeds are available. For slow-speed, press lightly. For regular-speed, press firmly.

ADVANCED VIDEOGRAPHY TECHNIQUES (Cont'd)



PROGRAMME AE WITH SPECIAL EFFECTS

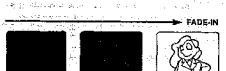
A variety of creative shooting effects are accessible with the PROGRAM AE select dial.

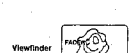
To engage any of the effects:
Turn the PROGRAM AE select dial so that the desired indication appears in the viewfinder.
— The chosen mode is activated approx. 1 second later.

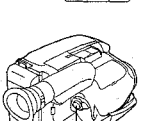
Notes:

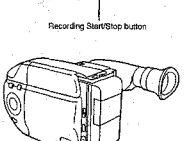
- Only one Special effect can be activated at a time.
- Picture colour may be adversely affected in High-Speed Shutter, Sports or Portrait mode when the subject is lit by alternating discharge-type light sources such as fluorescent or mercury-vapour lights.

Mark on dial	Viewfinder indication	Mode	What it does/When to use
RELEASE	No indication	Auto Mode Release	The mode for normal shooting.
Lock	A.LOCK	Auto Mode Lock	Setting to this mode locks the VideoMovie in the Full Auto mode, eliminating the possibility of misoperation by accidentally touching the following buttons while shooting. It is convenient when asking someone else to do the shooting. ■ These controls cannot be used in this mode: TITLES, FOCUS LOCK/MAN., DISPLAY, CINEMA, FADER, MWB (Manual White Balance).
⏱	S.TIMER ⏱10S	10sec. Self-Timer	This mode lets you delay the start of recording after the Recording Start/Stop button has been pressed. If the VideoMovie has been secured, the operator can enter the picture before actual recording begins. ■ When performing Self-Timer shooting, the tally lamp will start blinking approximately 10 seconds before the actual recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.
Fg	FOG	Electronic Fog Filter	Makes the picture look misty white, similar to the effect when an external fog filter is attached to the lens. Useful when you want to soften an image slightly or give it a "fancy" look.
1/8000	S 1/8000	High-Speed Shutter	This mode sets the shutter speed to 1/8000 sec. to clearly capture fast-moving action with less blur. Clarity is especially noticeable during slow motion playback on a video deck. Great for sports (i.e., golf swing), races, etc. This mode can capture faster action than the Sports mode can. **Note:** The screen becomes slightly dark with the High-Speed Shutter mode. Use this mode in the daytime outdoors and in other well-lighted situations.
	MONOTONE	Monotone	The scene being shot will be recorded in sepia-toned monochrome, making it look like an old movie. By using it in combination with Cinema mode (☞ P. 19), you can recreate the authentic look of a classic Hollywood movie.
	TWILIGHT	Twilight	Disengages the auto gain control and auto focus, and automatically locks the focus to infinity and white balance to ☀ (outdoor) mode. Dusk and twilight scenery, fireworks, etc. look more natural and dramatic. ■ Manual adjustment of white balance (☞ P. 20), and focus (☞ P. 17) is possible. ■ Pressing FOCUS LOCK/MAN. re-engages the auto focus mode.
	SPORTS	Sports	Uses high shutter speed to clearly capture fast-moving action with less blur. Clarity is especially noticeable during slow motion playback on a video deck. Great for sports, races, etc.
	PORTRAIT	Portrait	Reduces depth-of-field so the background becomes blurry while the subject remains clearly focused. Use it for beautiful portrait shots.









FADER

This VideoMovie incorporates a fader function which allows smooth video fade-in and fade-out to a black blank screen.
(With the Electronic Fog filter mode (☞ P. 18) engaged, the image fades in/out to a white screen.)

Fade-In

1 Press FADER.
— The VideoMovie enters into the Fade-Standby mode and "FADER" appears.
2 Press the Recording Start/Stop button.
— The screen immediately becomes blank and recording begins. Fade-in starts at the moment the Recording Start/Stop button is released.
■ If the button is not released, the screen will remain blank and be recorded as long as the button is kept pressed.

Fade-out

1 Press FADER in the Recording mode.
— The VideoMovie enters the Fade-Standby mode and "FADER" appears.
2 Press the Recording Start/Stop button.
— The viewfinder indications start blinking. Fade-out starts and will be completed in a few seconds.
■ When completed, the VideoMovie enters the Record-Standby mode automatically. At this time, if the button is not released, the screen will remain blank and be recorded as long as the button is kept pressed.

Notes:
- The screen will become slightly reddish when the fader function is used in the Monotone mode (☞ P. 18).
- Fader operation is not possible when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18).

CINEMA MODE

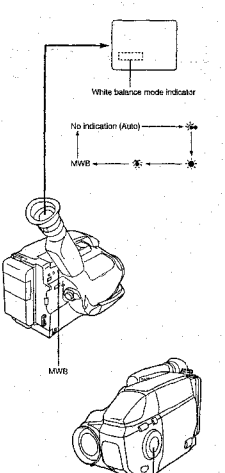
This VideoMovie incorporates a "Cinema" mode recording function which allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.

To engage the Cinema mode:
Press CINEMA.

To restore the normal screen:
Press CINEMA again.

Notes:
- The Cinema mode can be engaged only in the Record-Pause or Record mode.
- The Cinema mode is not available when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18).

ADVANCED VIDEOGRAPHY TECHNIQUES (Cont'd)



Useful tip:
It is helpful to connect your VideoMovie to a colour monitor when adjusting the white balance.

WHITE BALANCE ADJUSTMENT

This VideoMovie's Automatic Colour Temperature system senses the colour temperature of the ambient lighting for automatic white balance adjustment. However, precise color temperature adjustment is not possible under the following conditions:
- The object is in various shades of the same colour.
- Predominantly red or brown object is being shot outdoors.

In these cases, use the VideoMovie's built-in filters for white balance adjustment.

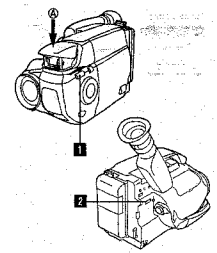
To adjust the white balance:
Press MWB (Manual White Balance) so that the required indication appears in the viewfinder.
☀.....When you shoot in the daytime outdoors (cloudy day)
☀.....When you shoot in the daytime outdoors (sunny day)
✲ .....When the source of illumination is a halogen or tungsten lamp.
MWB ... In the following situations.

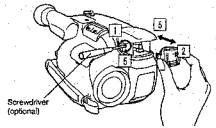
How to use the MWB mode
In the MWB mode, the VideoMovie automatically adjusts the colour temperature of the subject's light source and keeps that colour temperature during shooting. When shooting some subjects with different colour temperatures, use the MWB mode to set a colour temperature and you can shoot with natural colours that are not affected by surroundings.

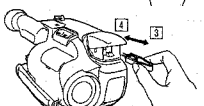
1 Press MWB until "MWB" appears in the viewfinder.
2 Point the VideoMovie at a white, flat object such as a sheet of white paper.
Adjust focus manually. (☞ P. 17)
3 Keep MWB pressed for more than about 3 seconds.
❶ "MWB" blinks in the viewfinder .....During adjustment
❷ "MWB" is lit .....Adjustment is finished
—The VideoMovie is now ready for shooting.

Notes:
- Re-adjust the MWB mode in the following conditions:
  - When the lighting has changed.
  - When the VideoMovie has been turned off and on again.
  - When PROGRAM AE's position has been changed.
- Manual White Balance adjustment is not possible when PROGRAM AE is set to "AUTO MODE LOCK". (☞ P. 18)

To switch to automatic adjustment:
Press MWB until the indication disappears, or turn the PROGRAM AE to "AUTO MODE LOCK".







CAUTIONS:

- **The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.**
- **Do not place the VideoMovie into the carrying case immediately after using the video light, since it remains extremely hot.**
- **When operating, keep a distance of about 30 cm between the video light and people or object.**
- **Do not use near flammable or explosive materials.**

LIGHTING — To apply more light to the scene (GR-AX60 only)

When natural lighting is too dim, you can brighten the scene by using the built-in video light.

1. Slide the LIGHT open knob to open the built-in video light.
2. Set the LIGHT ON/AUTO as required.
   - ON: Always keeps the light on as long as the VideoMovie is turned on.
   - AUTO: Automatically turns on the light when the VideoMovie senses insufficient lighting on the subject.
- Push Ⓐ to retract the video light.
  — The light automatically turns off.
- The video light can be used with the VideoMovie's power on.
- It is recommended to set the white balance to Indoor mode ( ) (☞ P. 20) when you use the video light.
- When not using the video light, retract it to save battery power.

Notes:

- Even if the battery warning indication ( ) does not appear in the viewfinder, if the battery pack's charge is low, the VideoMovie may turn off automatically when you turn on the video light, or when you start recording with the video light turned on.
- When the LIGHT ON/AUTO is set to "AUTO":
  - Depending on the lighting condition, the video light may not be stably turned on or off. In this case, switch the light on manually or retract it to turn it off.
  - While the Sports, High-Speed Shutter or Portrait mode (☞ P. 18) is engaged, the light is likely to stay on.
  - While the Twilight mode (☞ P. 18) is engaged, the light will not activate.

HOW TO REPLACE THE VIDEO LIGHT BULB

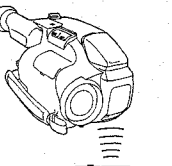
It is recommended to consult your nearest JVC dealer for replacing the bulb. However, if you wish to do it yourself, proceed as follows:

1. Turn and loosen the screw with a screw driver.
2. Pull out the lamp cover.
3. Pull out the bulb.
4. Insert a new bulb.
   - At steps 3 and 4, use the tweezers provided with new bulb to hold the bulb. Do not touch the bulb directly.
5. Reattach the lamp cover and tighten the screw.

CAUTIONS:

- **The video light unit and the bulb are very hot immediately after the power is turned off. Bulb replacement should be performed after it has cooled. (It will take approx. 30 minutes to cool sufficiently.)**
- **Do not touch the bulb directly. If it becomes dirty, smoke or reduced service life may result. When accidentally touched by fingers directly, wipe it with a soft cloth.**
- **Give the part number PEDP0152 when ordering a video light bulb.**
- **Use the exclusive halogen bulb which is available at your nearest JVC dealer.**

Viewfinder



RM-V704U
(Provided with GR-AX70/AX60, optional for GR-AX40)

To release the Self-Timer mode:

When "–" is not blinking:
Press INT. TIME continuously until "⏲" goes off.
When "–" is blinking:
Press Start/Stop to stop the blinking, then press INT. TIME continuously until "⏲" goes off.

- Turning the power off and on once engages the regular Record-Pause mode.

INDEX CODE MARKING

The VHS Index Search System (VISS) gives you automatic access to any point you select on a recording. Only the marking aspect of the Index Search System is included in this unit. It allows index codes to be placed on recorded tape for convenient dubbing or editing on VCRs with an Index Search function.

Auto marking

An index code is always marked at the beginning of the first recording after the date advances and a cassette is inserted.

— "INDEX" blinks while marking.

Manual marking

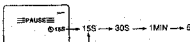
The RM-V704U remote control unit allows index codes to be marked in any desired position.

1. Press VISS once to put an index code onto the tape.
   — "INDEX" blinks during the marking process.
- If VISS has been pressed in the Record-Pause mode, an index code is put at the point where START/STOP is pressed.

SELF-TIMER

This Self-Timer function allows you to set the amount of time delay before recording starts after Start/Stop has been pressed. If the VideoMovie has been secured, the operator can enter the picture before actual recording begins.

1. Put the VideoMovie into the Record-Pause mode.
2. Press INT. TIME to select the interval time.
   — The following sequence of time setting is displayed with each press of INT. TIME:



Viewfinder

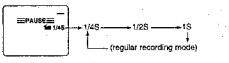
- If the VideoMovie's PROGRAM AE is set to "⏲"(Self-Timer mode), the 15S mode will be selected.

3. Press START/STOP.
   - When the selected time has elapsed, recording begins automatically.
   - When performing Self-Timer shooting, the tally lamp will start blinking approximately 10 seconds before the actual recording begins. Then when recording starts, the lamp lights normally to indicate recording is in progress.

ANIMATION

The Animation function produces the illusion of movement in otherwise stationary scenes or objects. This technique is accomplished by shooting a series of slightly different pictures of the same scene or slightly different poses of the same object for a brief period of time.

1 Put the VideoMovie in the Record-Pause mode.
2 Press REC TIME to select the recording time.
— The following sequence of time setting is displayed with each press of REC TIME:



Viewfinder

■ If the VideoMovie's PROGRAM AE is set to "Ⓐ" (Self-Timer mode), Animation will be cancelled and the VideoMovie will enter the Self-Timer 1SS mode.

3 Press START/STOP after focusing on the subject.
■ Recording stops automatically in the Record-Pause mode after the selected period of time.
4 Repeat steps 2 - 3 for the required number of pictures.
5 Playback the recorded series to check if results were satisfactory.

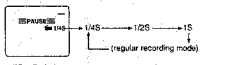
To release the Animation mode:
Press REC TIME until "🎥" in the viewfinder disappears.
■ The Animation mode can only be engaged from the Record-Pause mode.

Notes:
■ Keep the VideoMovie steady in one position when filming the series of shots for best results. Mounting the VideoMovie on a tripod is recommended.
■ Before recording in the Animation mode at the very beginning of a tape, set the VideoMovie to the Recording mode for about 5 seconds, so that the tape runs smoothly. Using the Fade-In function at this point is a good way to begin an animated programme.
■ Fade-in/out is not possible during Animation or Time-Lapse shooting.
■ When shooting in the Animation mode, the elapsed time counter reading may be incorrect. This is not due to any defect of the unit.

TIME-LAPSE

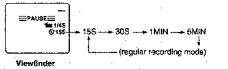
The Time-Lapse function allows automatic sequential on/off recording at preset time spans. With the VideoMovie continuously focused on a specific scene or object, the resulting recording will show subtle changes (such as shifts in cloud formations, plant growth etc.) over an extended period of time.

1 Put the VideoMovie into the Record-Pause mode.
2 Press REC TIME to select the recording time.
— The following sequence of time settings is displayed with each press of REC TIME:



Viewfinder

3 Press INT. TIME to select the interval time.
— The following sequence of time settings is displayed with each press of INT. TIME:



Viewfinder

4 Press START/STOP to start the Time-Lapse recording. The selected recording time and interval will alternate automatically.
■ The tally lamp functions in the same way as in Self-Timer shooting.

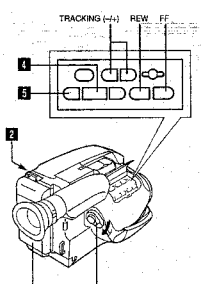
To release the Time-Lapse mode:

When "--" is not blinking:
Press INT. TIME and REC TIME continuously until "🎥" and "Ⓣ" go off.
When "-" is blinking:
Press Start/Stop to stop the blinking, then press the INT. TIME and REC TIME continuously until "🎥" and "Ⓣ" go off.

Notes:
■ When shooting in the Time-Lapse mode, the elapsed time counter reading may be incorrect. This is not due to any defect of the unit.
■ During steps 3 or 4, if the VideoMovie's PROGRAM AE is set to "Ⓐ" (Self-Timer mode), the Self-Timer 1SS mode will be engaged.

ENGLISH

PLAYBACK



The VideoMovie permits playback of recorded "VHS-C" video cassettes.
For connections refer to pages 26 and 27.

PLAYBACK OPERATION

1. Preparations

1 Supply power. (Battery or AC operation: ☞ P. 7.)
2 Insert a pre-recorded VHS-C cassette.
■ Ensure that tape is not slack inside the cassette, then load the cassette correctly. ☞ P. 11.

2. To playback a cassette

3 Set the power switch to "PLAY".
— The power indicator lights.
4 Press PLAY.
— Playback starts and playback picture appears on the viewfinder screen and connected TV.

3. To stop playback

5 Press STOP.
■ After about 5 minutes in Stop mode, the VideoMovie switches itself off automatically. (To turn on the VideoMovie again, set the power switch to "OFF" first and then back to "PLAY".)

REWIND OR FAST-FORWARD THE TAPE

Rewind the tape:
Press REW less than about 2 seconds in the Stop mode.

Fast-forward the tape:
Press FF less than about 2 seconds in the Stop mode.

For high-speed REW or FF the tape:
Press REW or FF more than about 2 seconds and release it.
— The elapsed time counter changes to "-:--:--".

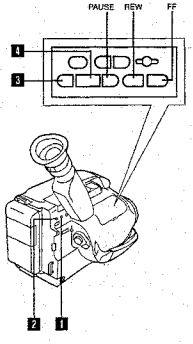
Note:
The elapsed time counter indication and counter memory function (☞ P. 25) do not function when using the high-speed REW or high-speed FF mode.

MANUAL TRACKING

If noise bars appear on the screen, the tracking needs to be adjusted.

1 Press either TRACKING to adjust to the best picture possible.
■ When re-engaging the preset tracking standard, press both TRACKING (–/+) simultaneously.

Note:
For tapes recorded on another videocamera or VCR, tracking adjustment may not be effective.



STILL PLAYBACK

Press PAUSE during playback.
— The power indicator lights.
- After about 5 minutes of still playback, the VideoMovie enters the Stop mode automatically for tape protection and switches itself off.

SHUTTLE SEARCH

Fast-speed forward playback:
Press FF during playback.
— Playback will be speeded up to 3 times normal speed.

Fast-speed reverse playback:
Press REW in the Play mode.
— The tape will be played back in the reverse direction at 3 times normal speed.

Notes:
- For brief fast-speed searching, keep FF or REW pressed for more than 2 seconds; when you release the button, the Search mode will be cancelled.
- Noise bars will appear and pictures may become monochrome while in Still Playback or Shuttle Search. This is not due to any defect of the unit.

COUNTER MEMORY FUNCTION

This VideoMovie incorporates a counter memory function which facilitates locating a specific tape segment.

1. Press COUNTER RESET.
   — Resets the counter to "0:00:00".
2. Press COUNTER MEMORY. — "M" appears.
3. After recording or playback, press STOP, then REW.
   — The tape will automatically stop at the counter reading of around "0:00:00".
4. Press PLAY. — Playback starts.

Notes:
- The counter memory function is effective in the Fast Forward mode as well.
- To cancel the memory function, press COUNTER MEMORY so that "M" disappears.
- When the power supply unit is disconnected, the counter memory function is instantly cancelled.
- The counter memory function is not effective when using the high-speed FF or high-speed REW (☞ P.24).

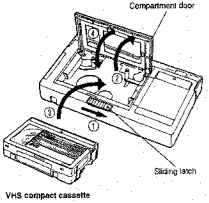
ENGLISH

USING THE CASSETTE ADAPTER

By using the Cassette Adapter, a VHS-C video cassette recorded with this VideoMovie can be played back with any deck-type VHS video recorder. Also, a VHS-C video cassette installed in the cassette adapter is fully compatible for both recording and playback on any deck-type VHS video recorder.

Note:
Only compact video cassette tapes marked VHSC can be used with the Cassette Adapter.

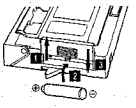
C-P6U Cassette Adapter
Being battery-operated, the C-P6U performs tape loading and unloading automatically.



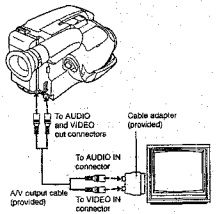
VHS compact cassette

Note:
During special-effects playback (slow motion, still frame, etc.) the picture may vibrate or noise bars may appear on the screen.

Inserting the battery into the cassette adapter
1. Remove the battery cover by sliding it up.
2. Install one "R6" battery.
3. Reattach the cover.



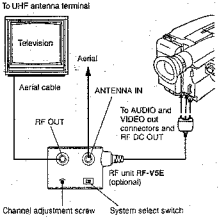
CONNECTIONS TO A TELEVILSION FOR PLAYBACK


To AUDIO and VIDEO out connectors
Cable adapter (provided)
To AUDIO IN connector
A/V output cable (provided)
To VIDEO IN connector

1 Connection to a television equipped with A/V input connector

For this situation, use the provided A/V output cable.

- Use the A/V output cable to simply connect the AUDIO and VIDEO out connectors of the VideoMovie to the AUDIO input and VIDEO input connectors of the TV.
- If your TV has the 21-pin AV input connector (SCART), use the provided cable adapter.
- Please also refer to the instruction manual of the TV you are connecting the VideoMovie to.



■ **TV system select switch (I/G)**

When you use a TV receiver built on the British PAL standard, shift the system select switch to "I".

■ **RF converter channel adjustment screw**

To make this adjustment, remove the small cap on the RF unit and turn the adjustment screw with a screwdriver to tune in a vacant channel. The RF unit permits playback of video and audio recordings through a TV receiver. The signals from the RF unit are viewed through a vacant channel not used for broadcasting in your area. The output frequency of the RF converter has been set to correspond to a broadcast on UHF channel 36. To view playback pictures from the VideoMovie with your TV receiver, tune its specified AV channel to UHF channel 36. If channel 36 is employed for broadcasting in your area, readjust the RF converter output channel to one of the vacant channels between 30 and 39.

Helpful hints:

- It is recommended to use the Multi AC Charger/Adapter as the power supply rather than the battery pack.
- **Rehearsal mode *:**

Even if no cassette is loaded inside, it is possible to monitor the picture and sound that the VideoMovie captures. Set the power switch to "CAMERA". As the television's input is switched to the VideoMovie's signals, its audio and video output shows them.

2 Connection to a television not equipped with A/V input connector

For this situation, use the optional RF unit.

1. Remove the aerial cable from the TV receiver.
2. Connect the aerial cable to the ANTENNA IN terminal of the RF unit.
3. Connect the RF OUT terminal of the RF unit to the aerial terminal of the TV receiver using the provided aerial cable.
4. Connect the VIDEO/AUDIO INPUT cable of the RF unit to the AUDIO and VIDEO out connectors and RF DC OUT of the VideoMovie.

PRECAUTIONS FOR RF UNIT

- For exclusive use with the VideoMovie.
- Use only the RF-V5E.
- Do not disassemble or remodel the RF unit
- Do not expose it to strong shocks.
- Unplug the connected equipment dur ng lightning storms. (Never touch the aerial cable.)

OPERATION

- **Viewing video cassettes being played back with the VideoMovie**

To view video cassettes or to monitor the recording, set the TV channel selector to the channel corresponding to the RF output channel.

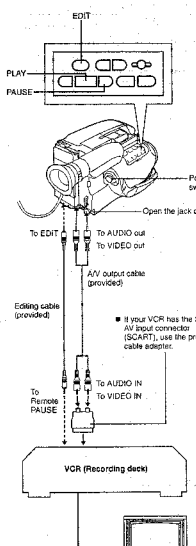
- **RF converter channel adjusting procedure**

1. Set the AV channel of the TV receiver to one of the vacant channels.
2. Power the VideoMovie.
3. Put the VideoMovie in the Rehearsal mode.*
4. While monitoring the output signal on the TV screen, turn the RF converter channel adjustment screw to that the monitored picture comes in most clearly.

CAUTION:

To view the VideoMovie recordings with a TV receiver, use a TV receiver having a specified AV channel and employ this AV channel as your VIDEO CHANNEL, otherwise playback may be disturbed with vibrating or bending pictures. AV channels refer to channels exclusively for video playback; because AFC circuits are applied to these channels, the playback pictures can be stabilised. Recent TV receivers have one or more AV channels.

EDITING TECHNIQUES



TAPE DUBBING

Preparations

- Connect the VideoMovie and the VCR as in the diagram on the left.
  - —The editing cable is used to connect the VideoMovie and a JVC VCR with a Remote PAUSE terminal.* (If the VCR does not have a Remote PAUSE terminal but has an R.A.EDIT connector, connect to it.)
- Set the power switch to "PLAY".
- Turn on the VCR.
- Correctly insert the appropriate cassettes into the VideoMovie and the VCR.

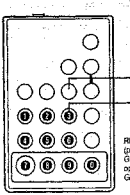
1. Engage the VCR's AUX(iliary) mode and Record-Pause mode.
2. Engage the VideoMovie's play mode to locate a position on the tape slightly before edit-in point. When this point is reached, press PAUSE to enter the still mode.
3. Press the VideoMovie's EDIT and set the VCR's recording mode to start editing.
   - —The VideoMovie rolls back the tape a little before it starts playback.
4. When the tape reaches the edit-out point, put the VCR's Record-Pause mode and the VideoMovie's still mode.
   - Repeat steps 1 - 3.
   - Stop both the VideoMovie and the VCR when dubbing is finished.

*** Dubbing using the editing cable to connect the VideoMovie and the JVC VCR with a Remote PAUSE terminal**

- —When the VideoMovie's EDIT is pressed at step 3, the VCR automatically starts recording. When the VideoMovie's PAUSE is pressed, the VCR automatically enters the Record-Pause mode.
- —Reset the VideoMovie's counter in advance to "M0:00:00" at an edit-out point. When the tape reaches the point (counter reading of 0:00:00) during dubbing, the VideoMovie enters the Still mode and the VCR enters the Record-Pause mode automatically. This function is called "Master Edit Control System".

Notes:

- There are some VCRs which are not compatible with the Master Edit Control system.
- When the tape reaches the preset edit-out point (M0:00:00)during the dubbing operation, it may stop slightly before or after the designated point on the tape.



VCR CODE LIST

VCR BRAND NAME	BUTTONS (A) (B)
AKAI	● ● ● ● ● ●
BLAUPUNKT	● ●
FERGUSON	● ● ● ● ● ●
GRUNDIG	● ● ● ●
HITACHI	● ● ● ● ● ●
JVC A B C	● ● ● ● ● ●
MITSUBISHI	● ● ● ●
NEC	● ● ● ●
PANASONIC	● ● ● ● ● ● ● ● ● ●
PHILIPS	● ● ● ● ● ● ● ● ● ● ● ● ● ●
SANYO	● ● ● ●
SELECO, REX	● ● ● ●
SHARP	● ● ● ●
SONY	● ● ● ● ● ● ● ● ● ●
THOMSON, TELEFUNKEN, SABA, NORDMENDE	● ● ● ● ● ● ● ●
TOSHIBA	● ● ● ● ● ●

RANDOM ASSEMBLE EDITING (R.A.Edit)

ENGLISH

This function makes it easier to create edited videos when your VideoMovie is used as the source player in combination with your VCR. You can pre-select up to 8 scenes or "cuts" for automatic editing in the sequence you have specified. Random Assemble Editing can be more conveniently done if the RM-V704U MBR (Multi Brand Remote) has been set to correspond to the brand of your VCR.

1 How to set the remote control unit to correspond to the brand of your VCR:

Turn the VCR's power off before starting.

1. Point the remote control toward the VCR's infrared beam sensor window.
2. Refer to the list on the left, and while pressing MBR SET, press button (A), then press button (B).
3. Release MBR SET.
   - The code is set and the VCR's power automatically comes on.
     If your VCR has more than one code, choose the code with which you can turn the VCR's power on.
     (With some VCR brands, power won't come on automatically. In this case, turn the VCR power on manually and check to see if the remote control buttons work with the VCR.)

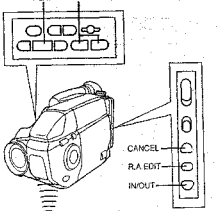
2 How to operate the VCR:

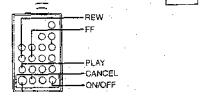
1. Turn the VCR's power ON.
2. Press the button on the remote control unit corresponding to the function you want to operate while pressing VCR CTL.
   - Since the remote control unit has a number of operation codes, determine the appropriate code for operating your VCR by confirming correct VCR operations according to the steps above.
   - The VCR functions that the RM-V704U can control are PLAY, STOP, PAUSE, FF, REW and VCR REC STBY. Among them, VCR REC STBY button doesn't need to be pressed along with VCR CTL.
   - If the RM-V704U is not able to control the VCR, use the controls on the VCR.

IMPORTANT:
Although the MBR (Multi-Brand Remote Control) is compatible with JVC VCRs, as well as many VCR models manufactured by others, it is possible that this remote control will not work with your VCR or may offer limited functions.

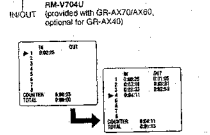
(Continued on next page.)

EDITING TECHNIQUES (Cont'd)





RM-V704U (provided with GR-AX70/AX80, optional for GR-AX40)



Preparations

- Connect the VideoMovie and the recording deck as per the diagram on the right (P.31).
  - A: If the recording deck is a JVC VCR that has a Remote PAUSE terminal, connect the Editing cable to it. (If the VCR does not have a Remote PAUSE terminal, connect to the R.A.EDIT connector.)
  - B: If the VCR has neither a Remote PAUSE nor an R.A.EDIT connector, connect the Editing cable to the RM-V704U's Pause-In jack.
- VideoMovie: Correctly insert a recorded tape and set the power switch to "PLAY".
- VCR: Turn power on. Insert a recordable tape, and set to the AUX(tiliary) mode. Refer to VCR's manual for details.

To select up to 8 scenes

1. Press PLAY.
2. Press R.A.EDIT.
   - The R.A. Edit counter display will appear in the viewfinder and on the TV screen.
3. Use FF or REW to search for the beginning of a scene you want, press IN/OUT.
   - The in-point's counter reading is registered on the display.
4. Use FF or REW to search for the end of the scene you want, press IN/OUT again.
   - The out-point's counter reading is registered on the display.
   - The "TOTAL" reading shows the total running time of the edited scenes.
5. Specify additional scenes by repeating steps 3 – 4.

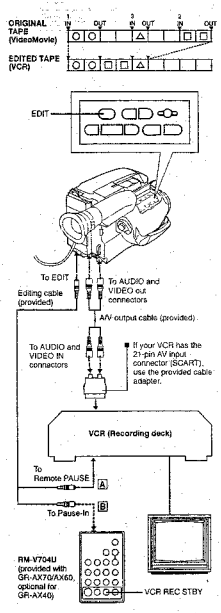
The RM-V704U can also be used for the following:

- ON/OFF functions same as R.A.EDIT of the VideoMovie
- IN/OUT functions same as IN/OUT of the VideoMovie
- CANCEL functions same as CANCEL of the VideoMovie

Notes:

- For any scene, the out-point must have a counter reading that is at least 1 second after the in-point. An out-point with a counter reading less than or the same as the in-point will not be registered.
- Since the VideoMovie prerolls during R. A. Edit, there must be at least 15 seconds worth of recording material prior to any in-point on the playback tape.
- Blank portions of tape cannot be registered as in- or out-points.
- If the search time for an in-point exceeds 5 minutes, the recording deck's Record-Pause mode will be cancelled and editing will not take place.
- Pressing the R.A.EDIT (ON/OFF) button will clear all in- and out-points from memory.
- Do not press COUNTER RESET during or after selecting the in/out points; this will reset the counter and cause R.A. Edit to function improperly.
- When editing, a slight discrepancy between the counter reading and actual in- and out-points may occur. Please position your in- and out-points with enough leeway so that segments will be recorded in their entirety (not cut off).

(Continued on next page.)



To make corrections

During steps 3 and 4 on the previous page, pressing CANCEL will erase the last in- or out-point. Pressing again will erase the point before that, and so on.

For automatic editing to a VCR

1 Put the VCR in the Record-Pause mode.
RM-V704U can also be used.
- Point the remote control toward the VCR's infrared sensor window and press VCR REC STBY.
- Be sure that the VCR enters the Record-Pause mode. If not, use the controls on the VCR to enter the Record-Pause mode.

Note:
With some manufacturer's VCR's, pressing VCR REC STBY may not place the VCR into the Record-Pause mode.

2 Press the VideoMovie's EDIT.
- The function begins automatic editing; all the scenes are copied to the VCR in the specified order.
- Keep the remote control pointed toward the VCR's remote sensor window. (in case of)
- The on-screen display remains superimposed while the VideoMovie searches for each scene (the blinking cursor points to the scene number presently being searched), and is not displayed while the scenes are being edited.
- When R. A. Edit is finished, the VideoMovie enters the Still mode and the VCR enters the Record-Pause mode. Press STOP on both units to end R. A. Edit.

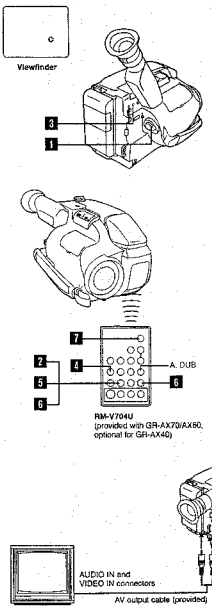
To dub the entire tape without any edits

To make a duplicate copy of the VideoMovie's tape, perform R. A. Edit by specifying only one in-point (and no out-point). R. A. Edit will automatically dub everything from that in-point to the end of the tape.

Note:
With some VCR models, there may be noise at the in- or out-points on the edited tape.

ENGLISH

EDITING TECHNIQUES (Cont'd)

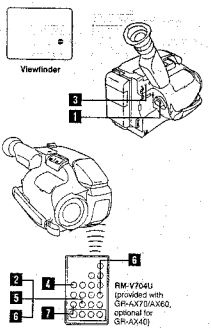


INSERT EDITING

Insert editing means recording a new scene into a section of prerecorded tape so that a part of the original recording can be replaced with a new sequence without excessive picture distortion at the edit-in and edit-out points. In the Insert Editing mode, the original audio on the audio track remains unchanged.

1 Set the power switch to "PLAY".
2 Locate the desired edit-out point on the tape and press PAUSE.
3 Press COUNTER RESET, then COUNTER MEMORY.
4 Press REW to rewind the tape a little beyond the beginning of the scene you wish to insert.
5 Press PAUSE exactly at the beginning of the scene to insert.
6 While holding INSERT pressed, press PAUSE.
— The VideoMovie enters the Insert Editing mode with the scene at which the VideoMovie is aimed appearing on the screen for monitoring.
7 Press START/STOP to insert the new sequence.
- When the counter reading of "0:00:00" is reached, insert editing stops automatically and the VideoMovie enters the Playback mode.

Notes:
- When in the Still mode, the counter indication may be blurred. This is normal.
- When the tape reaches the preset edit-out point during the editing operation, it may stop slightly before or after the designated point on the tape. Also, at that time, noise bars may appear momentarily. Neither of these is a defect of the unit.
- Only video signal is recorded in the Insert Editing mode. When the sound is to be recorded, press A. DUB and PAUSE simultaneously in the Insert Pause mode. When INSERT and PAUSE are pressed simultaneously again, the unit re-enters the Video-signal-only Recording mode.



AUDIO DUBBING

Audio dubbing means recording a new soundtrack on a pre-recorded tape, i.e., replacing the original sound with new audio material..

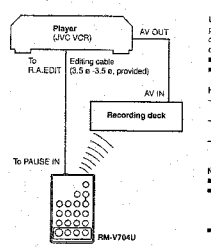
Precautions

- Tapes with their safety tabs removed cannot be audio dubbed. Reseal the safety tab slot to perform the dubbing.
- If whistling or howling is heard during audio dubbing, reduce the TV volume or move the mike farther away from the TV.

1. Set the power switch to "PLAY".
2. Locate the desired edit-out point on the tape and press PAUSE.
3. Press COUNTER RESET, then COUNTER MEMORY.
4. Press REW to locate more quickly the place on the tape you want to begin.
5. Press PAUSE at the exact beginning point.
6. While pressing A. DUB, press PAUSE to enter the Audio Dub Standby mode.
7. Press PLAY. — Audio dubbing begins.

- When the counter reading of "0:00:00" is reached, audio dubbing stops automatically and the VideoMovie enters the Playback mode.

SUPPLEMENTAL INFORMATION ON THE REMOTE CONTROL



Using the RM-V704U remote control, it is also possible to perform deck-to-deck Random Assemble Editing. The playback deck must be an R.A. Edit-capable JVC VCR. The recording deck can be...

- a VCR other than JVC, or
- a JVC VCR which has neither a Remote PAUSE nor an R.A. EDIT connector

How to use:

— Connect the playback deck and RM-V704U as shown on the left.

— Set the RM-V704U to correspond to the brand of the recording deck. (☞ P. 29)

— For Random Assemble Editing procedure, please refer to the instruction manual of the JVC VCR you are using as the playback deck.

Notes:

- RM-V704U cannot be used to control the playback deck.
- RM-V704U is capable of controling basic operations of the recording deck. While pressing VCR CTL, press PLAY, STOP, PAUSE, FF or REW for these functions. (Not possible with some brands and models). Other buttons cannot be used.
- To put the recording deck in the Record-Pause mode, use the controls on the recording deck itself.

ENGLISH

SYSTEMS FLEXIBILITY

For maximum enjoyment, make the most of the provided or optional accessories depending on the situation.

■ **Battery pack**
BN-V12U
BN-V14U
BN-V22U
BN-V50U
BN-V60U

*Recording time ☞ P. 7

■ **Multi AC Charger/Adapter**
AA-V35EG
Charges or discharges battery pack or powers the VideoMovie via household AC current. (Can be used with 110 V to 240 V.)

*Charging time ☞ P. 8

■ **Car battery charger BH-V3E***
Charges battery pack or powers the VideoMovie via a car battery. (Use with 12 V or 24 V negative grounded cars only.)

*Charging time

BN-V12U	Approx. 50 min.
BN-V14U	Approx. 55 min.
BN-V22U	Approx. 90 min.
BN-V60U	Approx. 90 min.

■ **Battery charger BH-VC10EG***
Use to charge the battery pack.

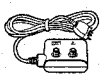
*Charging time

BN-V12U	Approx. 7 hours
BN-V14U	Approx. 8 hours
BN-V22U	Approx. 13 hours
BN-V60U	Approx. 13 hours

■ **Car battery cord AP-V5E/V7E**
Power the VideoMovie via a car battery. (Use with 12 V negative grounded cars only.)

*Cable length: 2 m

■ **RF unit RF-V5E**
Use to connect the VideoMovie to a regular television for playback.



*Cable length: 1.5 m

■ **Wirelss remote control unit RM-V704U**

■ **Wired remote control unit RM-V20U**
Controls VideoMovie's functions (POWER ON/OFF, REW, FF, STOP, PLAY, PAUSE, INSERT, AUDIO DUB, REC TIME, INTERVAL, VISS, START/STOP, ZOOM T/W) from a distance, and from any direction.

*Cable length: 3 m

■ **Compact VHS (VHS-C) cassettes EC-45/30**
Allows 45/30 minutes of VHS recording and playback respectively.

■ **Cassette adapter C-P6U**
Enables the VHS-C cassette to be used with regular VHS machines.

■ **Conversion lens kit GL-V10U**
Offers telephoto (1.4x) and wide-angle (0.6x) conversion.

■ **Shoulder strap VU-V220U**

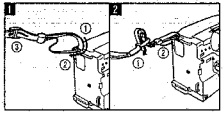
■ **Active carrying bag CB-V7U**

*Dimensions (W×H×D):
340 x 170 x 155 mm

*The BN-V50U battery pack is not rechargeable with the BH-V3E and the BH-VC10EG.

Some accessories are not available in some areas.

USING ACCESSORIES



ATTACHING THE SHOULDER STRAP

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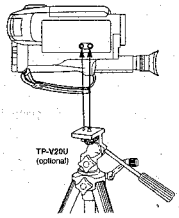
1 Loop the end of the strap over the top of the eyelet ①, then, folding it back, thread the end of the strap first through the keeper ②, then the buckle ③. Making sure that the strap is not twisted, repeat the above procedure to attach the other end of the strap to the other eyelet.

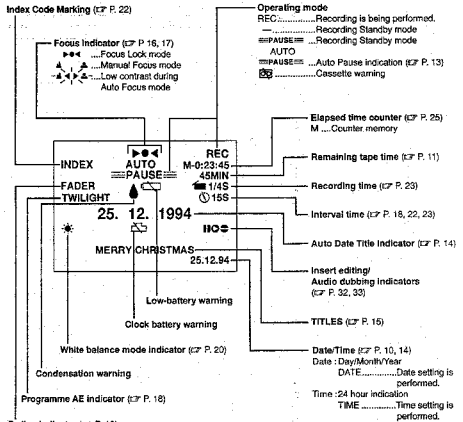
2 Adjust the shoulder strap to the desired length ①, then slide both keepers up snug against the eyelets to prevent the strap from slipping ②.



TRIPOD MOUNTING

Align the screw and camera direction stud of the tripod with the camera's tripod mounting socket and stud hole, and firmly tighten the screw.

VIEWFINDER INDICATIONS



Warning Indications

LOW-BATTERY WARNING ( )
When the battery power is coming to an end, a battery warning indication blinks in the viewfinder. After indication appears, the power turns off automatically. Replace the battery pack with a fully charged one.

CLOCK BATTERY WARNING ( )
Blinks when the lithium battery is not in place or exhausted. In this condition, no date/time function is available.

CONDENSATION WARNING ( )
Appears when the excessive moisture condensation occurs inside the unit.

CASSETTE WARNING ( )
Blinks to warn that no cassette or a cassette without safety tab is loaded.

HELPFUL TERMS AND INFORMATION

The following glossary is for your convenience in helping you better understand your VideoMovie and its operation.

AGC (Auto Gain Control):
Automatically increases camera sensitivity when the illumination falls below a certain level.

Animation:
By shooting the same inanimate subject repeatedly with slight variations each time, the illusion of motion can be created.

Audio dubbing:
Allows you to replace only the linear audio portion in a previously recorded scene (for adding narration, etc.).

Auto Pause System:
Prevents shooting unnecessary scenes by mistake when the VideoMovie is pointed straight down (i.e., the ground, feet).

AUX mode:
Refers to Auxiliary mode. When the VideoMovie is connected to a VCR for editing or dubbing, the VCR should be set to this mode.

AV:
Short for Audio/Video. Often refers to the audio (sound) and video (picture) signals which, when combined, make up a programme.

CCD (Charge Coupled Device):
Solid-state imaging device used in VideoMovies as the camera's image pickup; analogous to the eye's retina except that picture information is output as electric signals.

Cinema mode:
"Letterboxes" five recordings (blacks out the top and bottom of the screen) to give scenes recorded on a VideoMovie a "wide screen" effect.

Colour temperature:
A measurement in Kelvin degrees which indicates the colour contents of a light source; bluish light has a higher colour temperature than reddish light. To reproduce white as white under different types of lighting, the chrominance signal must be adjusted to match the light source's colour temperature. (See "White balance".)

Head:
An electronic component which "writes" or "reads" video signals on the tape.

HQ (High Quality):
An enhancement feature in the VCR circuitry which provides greater picture detail.

Lithium battery:
Necessary for VideoMovie's clock and date/time/age settings, and for use of the RM-V704U Remote Control Unit. Use only CR2025.

Master Edit Control:
Lets a VideoMovie control the starting and stopping of a VCR during editing for accurate, synchronized editing at the touch of a single button.

On-screen display:
The viewfinder indications can also be displayed on the screen of a monitor or TV that's connected to the VideoMovie.

Programme AE with Special Effects:
A variety of creative shooting effects (Portrait, Twilight, Monotone, etc.) are accessible.

Quick review:
Permits reviewing of the final part of the last recorded segment in the Record-Pause mode.

R.A.Edit (Random Assemble Editing):
This feature lets you pre-select up to 8 scenes to be automatically rearranged and edited to a connected VCR.

Refresh:
A feature on the AC power adapter that lets you completely discharge the power from the battery pack before charging again. Contributes to longer battery life.

Retake:
Permits forward or reverse search in the Record-Pause mode for easy re-recording.

Self-timer:
Enables a VideoMovie to automatically start recording after a selected delay time so the operator can enter the picture before actual recording begins.

Time-lapse:
Permits automatic on/off sequential recording at preset intervals. Used to capture changes over long periods of time.

Tracking:
A mechanism enabling the tracking position to be adjusted during playback so that the heads can accurately pick up the recorded signal in the best condition.

Tally lamp:
Lights to show that recording is in progress.

VCR:
Short for Video Cassette Recorder.

White balance:
A term that refers to the correctness of colour reproduction under various lighting. If the white balance is correct, all other colours will also be accurately reproduced.

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CAUTIONS

For safety, strictly observe the following instructions.
- Do not open the VideoMovie's chassis.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not use the unit when there is lightning in the vicinity. Disconnect the power cable of connected equipment.

Avoid using the unit under the following conditions:
- Places subject to excessive humidity or dust.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
- Places subject to soot or steam such as near a cooking stove.
- Places subject to excessive shock or vibration.
- Near a television set (rolling pictures or howling might result).
- Extremely hot places.

Do not expose the unit to high temperatures over 40°C for long periods.
If the unit should be subjected to direct sunlight, or left in a closed car in summer, or placed near a heater, the CCD and the auto-focus sensor may deteriorate and the cabinet may become deformed. Furthermore, this also may cause the transistors and other electronic and mechanical parts to malfunction. Remember the following:
- Do not leave the unit in places of over 50°C.
- Do not use the unit in places of over 40°C.
- Do not use the unit in places of below 0°C.
- Protect the unit from excessively dry or humid conditions (below 35% or above 80% humidity).
- For long storage, select a place between –20°C and 30°C.

Take special care for protection of the unit.
- Do not allow the unit to become wet.
- Do not leave the unit in closed cars on hot summer days.
- Take special care not to drop the unit or strike it against hard objects. Protect from shocks during transportation.

Be careful when using the video light. (GR-AX60 only)
- The video light becomes extremely hot. Do not touch it either while in operation or soon after turning it off, otherwise serious injury may result.
- Do not place the VideoMovie into the carrying case immediately after using the video light, since it remains extremely hot.
- When operating, keep a distance of about 30 cm between the video light and people or object.
- Do not use near flammable or explosive materials.

Make it a rule to observe the following instructions.
- Do not remove the battery pack or disconnect other power supply units while the power is on. If not observed, this will cause tape damage and misoperation.
- When the unit is not in use, remove the battery pack.

Always keep the lens and viewfinder eyepiece clean.
- When the lens is dirty or dusty, blow it with a blower brush and then gently wipe with lens cleaning paper.
- Mold may form if the lens is left dirty.

Be careful not to damage the CCD.
- Do not keep the lens directed at extremely bright objects such as the sun or other light sources for long periods. Although the CCD is less susceptible to such burn than a tube would be, caution should be exercised when using this unit. Most importantly, the lens should be capped except while actually shooting.
- Do not direct the eyepiece of the viewfinder at the sun.

Handle the unit carefully.
- Protect the microphone from excessive shocks.
- Do not carry the unit by holding it only by the viewfinder.

Moisture condensation.
- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass's outer surface. This same phenomenon occurs on the head drum of a VideoMovie when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the VideoMovie itself.
- If moisture condensation occurs on the head drum, a condensation warning appears in the viewfinder and the unit enters the Stop mode, unable to function. In such a case, wait for a few hours until the indicator disappears.

Maintenance

- When the VideoMovie's exterior is dusty, clean it by gently wiping with a soft cloth.
- Avoid using of strong cleaning agents such as benzine or alcohol as they may damage the exterior.
- Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

General Battery Precautions

- When the RM-V20U/C-P6U is not functioning even when correctly operated, the batteries are exhausted. Replace them with fresh batteries.
- Use only following batteries in the unit.
  RM-V20U.....R03 (AAA) size
  C-P6U.....R6 (AA) size

Please make note of the following rules for battery use. When misused, batteries can leak or explode.

1. Insert the batteries correctly according to the diagram inside the battery section.
2. Do not use old and new batteries together.
3. Do not use two different kinds of batteries. Although sizes may be the same, voltages may differ.
4. Do not expose batteries to excessive heat as they can leak, or explode. Do not dispose of batteries in a fire.
5. Remove batteries from the unit if it is to be stored for an extended period to avoid battery

VIDEO CASSETTES

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- The VideoMovie employs only the cassettes carrying the VHS-C mark.
- Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
- An inverted cassette cannot be inserted.
- Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.
- Make certain before loading the cassette that the tape is not slack. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up slack.
- The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to reseal the slot.
- To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.

Storage of cassettes

- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

IN CASE OF DIFFICULTY

What may initially appear to be trouble is not always a real problem. Make sure first.....

Symptoms	Check points
Power	
No power is supplied.	■ Is the battery pack correctly installed? ■ Is the battery pack charged? ■ Is the power supply unit correctly connected?
Recording	
Recording is impossible.	■ Check to see if the cassette safety tab is in place. ☞ P. 39.
Recording does not start.	■ Have you set the power switch to "CAMERA" first?
Playback	
Tape is running, but no playback picture appears.	■ Is the TV receiver set to your video channel? ■ If A/V connection is used, is the TV's VIDEO/TV switch set to VIDEO? ■ Is the RF unit set to the correct channel?
Noise bars appear in the playback picture.	■ Use TRACKING to reduce noise bars.
Playback picture is blurred or interrupted.	■ Video heads may be dirty or worn out. For head cleaning or replacement, consult the nearest JVC Service Dealer.
Tape transport	
Tape stops during fast forward or rewind.	■ Is the "M" indication visible in the viewfinder? If so, press COUNTER MEMORY to cancel the memory function.
Rewinding or fast forwarding is impossible.	■ Check to see if the tape has already been fully wound on one reel or the other.
Other	
Vertical white lines appear when shooting a very bright object.	■ This may occur when the background contrasts very much with the object. This is normal.
Crystal-shaped bright spots appear in the viewfinder.	■ Is the sun located in front or off to a slight angle from the front of the lens? Avoid letting sunlight directly into the lens by changing the VideoMovie's position, zooming in or out slightly, shading the lens with your hand, etc.
Error number (E01, etc.) appears in the viewfinder.	■ Consult your nearest JVC Service dealer.

The VideoMovie is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, Multi AC Charger/Adapter, etc.) and clock battery; and then reconnect it and proceed as usual from the beginning.

Special note on head cleaning

Accumulation of dirt and other particles on the video heads may cause the playback picture to become blurred or interrupted. Although this VideoMovie is equipped with a built-in head cleaner which automatically cleans the heads, reducing the likelihood of dirty heads, if such troubles are encountered, please consult your nearest JVC dealer.

- A built-in head cleaner automatically cleans the video heads and head drum whenever a cassette is loaded and unloaded to reduce head clogging.

SPECIFICATIONS

GENERAL

Format	:	VHS PAL standard
Power source	:	DC 6 V ⎓
Power consumption	:	6.5 W (GR-AX60 light off, GR-AX70/GR-AX40) 9.5 W (GR-AX60 light on)
Signal system	:	PAL-type
Video recording system	:	Luminance: FM recording Colour: Converted sub-carrier direct recording Conforms to VHS standard
Cassette	:	VHS C cassette
Tape speed	:	23.39 mm/sec
Recording time Max.	:	45 minutes (with EC-45 cassette)
Operating temperature	:	0°C to +40°C
Operating humidity	:	35% to 80%
Storage temperature	:	–20°C to +50°C
Weight	:	Approx.720 g (GR-AX70/AX40) Approx. 730g (GR-AX60)
Dimensions	:	115(W) x 118(H) x 182(D) mm (incl. viewfinder)

VIDEO

Output	:	1 Vp-p, 75 ohms, unbalanced (via VIDEO out connector)

AUDIO

Output	:	–6 dBs, 1 k-ohm (via AUDIO out connector).

CAMERA

Pick up	:	1/3"-format CCD
Minimum required illumination	:	2 lux (F1.8)
Illumination range	:	2 to 100,000 lux
Lens	:	F1.8, f = 5.5 to 66 mm, 12:1 power zoom lens with auto iris and macro control, filter diameter 43 mm
Viewfinder	:	Electronic viewfinder with • 0.7" colour LCD (GR-AX70) • 0.6" black/white CRT (GR-AX60/AX40)
White balance adjustment	:	Auto/Manual

MULTI AC CHARGER/ADAPTER (AA-V35EG) SPECIFICATIONS

Power requirement	:	AC 110 to 240 V∿, 50/60 Hz
Power consumption	:	23 W
Output	:	DC 8.5 V ⎓, 1.6 A (CHARGE), DC 6.3 V ⎓, 1.8 A (VTR)
Charging system	:	Constant current, peak detection, timer controlled
Dimensions	:	98(W) x 46(H) x 138(D) mm
Weight	:	Approx. 390 g

CASSETTE ADAPTER (C-P6U) SPECIFICATIONS

Dimensions	:	188(W) x 25(H) x 104(D) mm
Weight	:	Approx. 240 g
Accessory	:	"R6"-size battery x 1

PROVIDED ACCESSORIES

Multi AC Charger/Adapter AA-V35EG
Battery pack BN-V12U
A/V output cable
Editing cable
Cable adapter
Lithium battery CR2025
Remote control unit (GR-AX70/AX60 only) RM-V704U
Cassette adapter C-P6U
Shoulder strap VU-V220U

For optional accessories, ☞ P. 34

E.&O.E.Design and specifications subject to change without notice.

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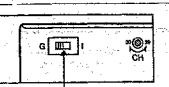
POUR VOTRE SECURITE

ATTENTION:
POUR EVITER TOUT RISQUE D'INCENDIE OU D'ELECTROCUTION, NE PAS EXPOSER CET APPAREIL A LA PLUIE NI A L'HUMIDITE

L'adaptateur secteur/chargeur de batterie AA-V35EG ne doit être utilisé que sur 110 — 240 V∿, 50/60 Hz.

Attention:
Pour éviter tout risque d'électrocution ou d'incendie, NE PAS utiliser une autre source d'alimentation.

Avertissement sur la pile au lithium
La pile utilisée dans cet appareil peut présenter des risques d'incendie ou de brûlure chimique si elle est mal traitée. Ne pas recharger, démonter, chauffer à plus de 100°C ni mettre au feu. Changer la pile avec une CR2025, l'utilisation d'une autre pile peut présenter un risque d'incendie ou d'explosion.
- Jeter immédiatement les piles usées.
- Placer hors de la portée des enfants.
- Ne pas démonter ni jeter au feu.



ATTENTION:
Le sélecteur de système sur le convertisseur HF RF-V5E en option a été réglé sur G (PAL continental, 5,5 MHz).

ATTENTION:
Pour éviter tout risque d'électrocution, ne pas ouvrir le boîtier. Aucune pièce intérieure n'est à régler par l'utilisateur. Se référer à un agent qualifié en cas de problème.

REMARQUES:
- La plaque d'identification (numéro de série) et l'étiquette d'avertissement de sécurité se trouvent sous l'appareil ou au dos.
- La plaque d'identification (numéro de série) de l'adaptateur secteur/multi-chargeur est située sous l'appareil.

Cet appareil a été fabriqué pour être conforme aux directives 76/889/CEE, 82/499/CEE, 87/308/CEE, et au standard CEI 65.

Nous vous recommandons de bien lire les précautions à observer aux pages 78 et 79 avant utilisation.

VHS C HQ

- Le camescope est conçu exclusivement pour les cassettes vidéo VHS-C. Seules les cassettes marquées VHS-C peuvent être utilisées avec cet appareil.
- Le VHS HQ est compatible avec le matériel VHS existant.

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